(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
31 December 2003 (31.12.2003)

PCT

(10) International Publication Number
WO 2004/000369 A2

(51) International Patent Classification[7]: A61K 49/06, 33/26, 33/24, C12N 5/06, C12M 3/00

(21) International Application Number: PCT/GB2003/002624

(22) International Filing Date: 19 June 2003 (19.06.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0214209.9 19 June 2002 (19.06.2002) GB

(71) Applicant *(for all designated States except US)*: KEELE UNIVERSITY [GB/GB]; Keele, Staffordshire ST5 5BG (GB)

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: EL HAJ, Jennifer, Alicia [GB/GB]; Keele University, Centre for Science & Technology in Medicine, North Staffordshire Hospital Trust, Keele University, Thornburrow Drive, hartshill, Stoke-on-Trent ST4 7QB (GB). DUBSON, Jon, Paul [GB/GB]; Keele University, Centre for Science & Technology in Medicine, North Staffordshire Hospital Trust, Keele University, Thornburrow Drive, Hartshill, Stoke-on-Trent ST4 7QB (GB).

(74) Agent: HARRISON GODDARD FOOTE; 31 St. Saviourgate, York YO1 8NQ (GB)

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:
— *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD

(57) Abstract: There is described a method of magnetically manipulating a cell *in vivo* which comprises the association of a magnetisable particle with a cell. More particularly, there is described a method of magnetically manipulating a cell which comprises the association of a magnetisable particle with a cell characterised in that the method comprises agonising or antagonising ion channels within a cell by the association of a magnetisable particle with a cell. There is also described the use of a magnetisable particle in a method of magnetically manipulating a cell *in vivo* and/or activating ion channels *in vivo*.

WO 2004/000369 A2